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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

RM-8648

In the Matter of

Petition for Rulemaking to  
Allocate the 5.1 -5.35 GHz Band  
and Adopt Service Rules for a  
Shared Unlicensed Personal Radio  
Network

Allocation of Spectrum in the 5  
GHz Band to Establish a Wireless  
Component of the National  
Information Infrastructure

RM-8653

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Comments of Nortel on the Petitions for Rulemaking

Northern Telecom Inc. ("Nortel") hereby comments on the petitions for rulemaking submitted by the Wireless Information Networks Forum ("WINForum") and Apple Computer, Inc. ("Apple") seeking an allocation of spectrum for new, high-speed, wide-bandwidth wireless applications.<sup>1/</sup> As detailed below, Nortel supports a new frequency band allocation because it believes that the resulting services will well serve the public interest. Thus, Nortel urges the Commission promptly to initiate a rulemaking to allocate spectrum and create service rules for the proposed unlicensed frequency band allocation suggested by WINForum and Apple.

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<sup>1/</sup> In recognition of the related nature of the two petitions, the Commission consolidated the comment cycle. Order Extending Time, DA 95-1254, released June 8, 1995.

Nortel is the second largest telecommunications equipment manufacturer in the United States, supplying systems to businesses, universities, local, state and federal governments, the telecommunications industry, and other institutions worldwide. The company employs more than 22,000 people in the United States in manufacturing plants, research and development centers, and in marketing, sales and service offices across the country.

In February 1991, the company established a wireless systems organization that has as its objective the development of new wireless technologies and services to meet marketplace demands throughout the world. In recognition of the growing importance of wireless communications, this group has been made comparable in organizational stature to the company's historical public and private network product line groups.

Nortel has been an active participant in the numerous fora addressing the development of new wireless services. Nortel has conducted several technical and market trials pursuant to experimental licenses issued by the Commission. Nortel was also one of the early members and strong supporters of industry efforts to foster the development of new wireless services, including Telocator, WINForum and UTAM. In particular, Nortel has been working with WINForum on its proposal for SUPERNet, the subject of WINForum's petition for rulemaking.

As Apple indicated in its petition for rulemaking, the proposed unlicensed service would extend the effective reach of the National Information Infrastructure by making possible high-bandwidth access and interaction throughout a limited area, both

on an ad hoc peer-to-peer basis, and through wireless local area networks.<sup>2/</sup> Indeed, the proposed allocation would expand dramatically the public interest benefits the Commission anticipated when it allocated spectrum for unlicensed PCS.<sup>3/</sup>

Nortel agrees with both WINForum and Apple that there is a need for a wideband frequency band for new high-speed wireless services. As both petitions demonstrate, an allocation of spectrum for such a service will provide manifold public benefits: such a service will provide an important link in the national information infrastructure; such a service can link schools with the information superhighway, and allow more effective education; such a service will support community networks; the enhanced ability to communicate will allow businesses to operate more efficiently as the United States seeks to remain competitive in the increasingly global marketplace; export opportunities will be created for U.S. businesses because of the alignment of these new services with the European HIPERLAN standard and frequency allocation. The result of these various opportunities and enhancements will be the creation of new jobs within the United States.

The petitions also demonstrate the need for prompt action by the Commission. The Apple and WINForum petitions overlap insofar as they both suggest using the lower portion of the 5 GHz band for this new unlicensed service. This spectrum

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<sup>2/</sup> Apple Petition at p. ii.

<sup>3/</sup> See generally, Amendment of the Commission's Rules to Establish New Personal Communications Services, 8 FCC Rcd 7700 (1993) at ¶'s 79-91.

may become available because of a shift by the FAA away from using all of the band for a microwave landing system (MLS), and instead relying on GPS, the global positioning satellite system developed by the U.S. government. The spectrum thus freed up by moving away from MLS could be put to highly productive use for the proposed unlicensed, high-speed radio services.

Nortel understands that the same portion of the 5 GHz band, however, is also being considered for use for feeder links for low-Earth orbit satellite systems. The issue of allocation of this spectrum for non-geostationary satellite system feeder links will likely arise at the upcoming World Radiocommunications Conference (WRC-95). Thus, Nortel joins with WINForum and Apple in calling for prompt Commission action so that WRC-95 does not preclude the use of this band for the proposed unlicensed services. As the WINForum petition indicates, it should be possible for both services to share this band as demonstrated by studies in Europe looking at HIPERLAN, as well as studies looking at proposed U.S. low-Earth orbit systems.<sup>4/</sup> The Commission, however, must ensure that actions taken at WRC-95 do not prejudice the proposed unlicensed services. Thus, prompt initiation of the proposed rulemaking is essential.

While many of the details will need to be fleshed out in the rulemaking itself, both the WINForum and Apple petitions present some excellent ideas that should be incorporated into the service rules ultimately adopted by the Commission. Nortel

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<sup>4/</sup> WINForum Petition at p. 16. See also Apple Petition at p. 31 ("the proposed NII Band could accommodate a limited number of U.S. MSS feeder link stations").

supports the suggestion of WINForum that the service should be unlicensed, but subject to a spectrum sharing protocol or etiquette (analogous to the sharing of the unlicensed PCS spectrum) to be developed through industry consensus.<sup>5/</sup> The use of such standards will maximize spectrum utilization efficiency, and additionally maximize coexistence and compatibility among disparate systems.

Nortel also supports the Apple proposal to apply a "Part 16" regulatory regime to this unlicensed band.<sup>6/</sup> Under this scenario, the service would be given primary status and thereby receive protection from incursions by other services. The "Part 16" approach would thus differ from a "Part 15" regulatory scheme in which those unlicensed services are secondary to other services. Under the Apple proposal, coexistence in this band with other unlicensed users would be assured by the spectrum usage rules for this service, and protection from other services would be assured by out-of-band emission limitations or other coordination and/or avoidance requirements.

Nortel observes that there are several distinctions between the WINForum and Apple proposals. Among the differences are the absence of any prioritization in the Apple access scheme, the permitted power levels (insofar as Apple envisions longer distance communications of 10-15 km or more), and the amount of bandwidth allocated initially and the location of the bands

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<sup>5/</sup> WINForum Petition at pp. 19-21.

<sup>6/</sup> Apple Petition at pp. 5-6.

(although both petitions seek use of portions of the lower 5 GHz band). The record at present is inadequate for Nortel to determine, where there are differences, which of the two proposals would best serve the public interest. However, the Commission can seek additional information on both of the proposals in the context of a rulemaking proceeding.

Thus, despite the existence of some technical differences between the two petitions, Nortel urges the Commission promptly to initiate a proceeding to allocate spectrum for wideband, high data rate unlicensed wireless services as both petitions suggest, and allow the details to be worked out in the course of the rulemaking. Nortel supports the WINForum and Apple petitions for rulemaking, and agrees that the public interest would be very well served by such a new, unlicensed service.

Respectfully Submitted,



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Dated: July 10, 1995

### **CERTIFICATE OF SERVICE**

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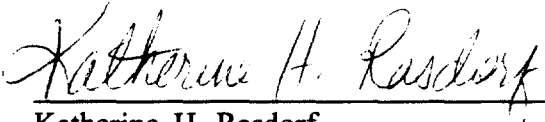
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